

Claims

- [c1] 1.A stent comprising a plurality of segments including a first balloon expandable segment which is not self-expanding, a second balloon expandable segment which is not self-expanding and a first self-expanding segment, the first self-expanding segment disposed between the first and second balloon expandable segments, the segments axially displaced from one another.
- [c2] 2.The stent of claim 1 wherein the segments further comprise a second self-expanding segment, the second self-expanding segment disposed between the first and second balloon expandable but not self-expanding segments.
- [c3] 3.The stent of claim 2 wherein the segments further comprise a third balloon expandable segment, the second self-expanding segment disposed between the second balloon expandable segment and the third balloon expandable segment.
- [c4] 4.A stent having first and second ends which are not self-expanding and one or more self-expanding segments therebetween.
- [c5] 5.A stent comprising a plurality of interconnected cells, some of the cells being self-expanding and some of the cells being balloon expandable but non-self-expanding, the self-expanding cells provided in one or more islands amongst the balloon expandable but non-self-expanding cells, at least one of the islands being either an end island located at an end of the stent or an intermediate island located between ends of the stent, the end island extending over less than the entire circumference of the stent and being circumferentially and axially adjacent to balloon expandable but non-self-expanding cells, the intermediate island surrounded by balloon expandable but non-self-expanding cells.
- [c6] 6.The stent of claim 5 comprising a plurality of islands of self-expanding cells.
- [c7] 7.The stent of claim 6 wherein the islands are regularly distributed about the stent.
- [c8] 8.The stent of claim 5 comprising more balloon expandable but non-self-

expanding cells than self-expanding cells.

[c9] 9.The stent of claim 6 wherein each of the islands contains more than one self-expanding cell.

[c10] 10.A stent comprising a plurality of sections including at least one self-expanding section which extends helically about the stent and at least one balloon expandable but non-self-expanding section which extends helically about the stent.

[c11] 11.The stent of claim 10 comprising a plurality of the self-expanding sections and a plurality of the balloon expandable but non-self-expanding sections.

[c12] 12.The stent of claim 11 wherein the self-expanding sections and the balloon expandable but non-self-expanding sections alternate with one another along the length of the stent.

[c13] 13.The stent of claim 11 wherein the balloon expandable but non-self-expanding sections are of the same width as the self-expanding sections.

[c14] 14.The stent of claim 11 wherein the balloon expandable but non-self-expanding sections are wider than the self-expanding sections.

[c15] 15.The stent of claim 14 wherein the balloon expandable but non-self-expanding sections are twice the width as the self-expanding sections.

[c16] 16.The stent of claim 11 wherein the each of the sections is stepped.

[c17] 17.The stent of claim 11 wherein each of the sections comprises a plurality of cells.

[c18] 18.The stent of claim 11 wherein each of the sections is in the form of a serpentine band.

[c19] 19.The stent of claim 11 wherein the width of each of the self-expanding and balloon expandable but non-self-expanding sections varies along the length of the section.

[c20] 20.A stent comprising a plurality of sections including at least one self-

expanding section which extends in one direction about a longitudinal axis of the stent and at least one balloon expandable but non-self-expanding section which extends in another direction about the longitudinal axis of the stent.

[c21] 21.The stent of claim 20 comprising a plurality of self-expanding sections and a plurality of balloon expandable but non-self-expanding sections.

[c22] 22.The stent of claim 21 wherein the self-expanding section extends in a first helical direction and the balloon expandable but non-self-expanding sections extend in a second helical direction.

[c23] 23.A method of manufacturing a stent comprising the steps of:
providing a tubular stent preform or a stent preform in the form of a sheet, the stent preform made of a non-self-expanding material having a plurality of first openings therein corresponding to a desired stent pattern and at least one second opening therein for receiving a self-expandable stent material therein;
disposing a self-expandable segment in the second opening and securing it to the stent preform; and
where the stent preform is in the form of a sheet, rolling the sheet to form a tube.

[c24] 24.The method of claim 23 wherein the stent preform has a plurality of second openings therein and a self-expandable segment is disposed in each second opening and secured to the stent preform.

[c25] 25.The method of claim 24 wherein the stent preform is made of stainless steel and the self-expandable segments are made of a shape memory alloy.

[c26] 26.The method of claim 25 wherein the shape memory alloy is an FeMnSiCrNi shape memory stainless steel.

[c27] 27.The method of claim 24 wherein the self-expandable segments are secured to the stent preform via laser welding.

[c28] 28.A method of manufacturing a stent comprising the steps of:
providing a tube or a sheet made of a first metal and a second metal secured one to the other;

where present, rolling the sheet into a tube;
disposing an anti-galvanic coating on the tube or the sheet;
disposing a paclitaxel/SIBS compound on the anti-galvanic coating.

[c29] 29.A stent with a biological treatment coating disposed thereon, the stent comprising at least one balloon expandable non-self-expanding section and at least one self-expanding section.

[c30] 30.A method of manufacturing a stent comprising the steps of:
disposing a tube on a mandrel, the tube comprising at least one section which is self-expanding and at least one section which is balloon expandable but non-self-expanding;
and heat treating the tube with the at least one self-expanding section expanded to a cross-section at least in excess of the maximum diameter of the balloon expandable but non-self-expanding section.

[c31] 31.A stent comprising an FeMnSiCrNi shape memory stainless steel.

[c32] 32. The stent of claim 31 further comprising a balloon expandable non-shape memory metal.

[c33] 33. A method of manufacturing a stent comprising the steps of:
providing a stent preform in the form of a tube or a sheet, the stent preform made of a first metal and a second metal secured one to the other, the first metal being a shape memory metal, the second metal being a non-shape memory metal;
providing a plurality of openings in the first metal and providing a plurality of openings in the second metal; and,
where the stent preform is in the form of a sheet, rolling the sheet into a tube.